DOCUMENT RESUME

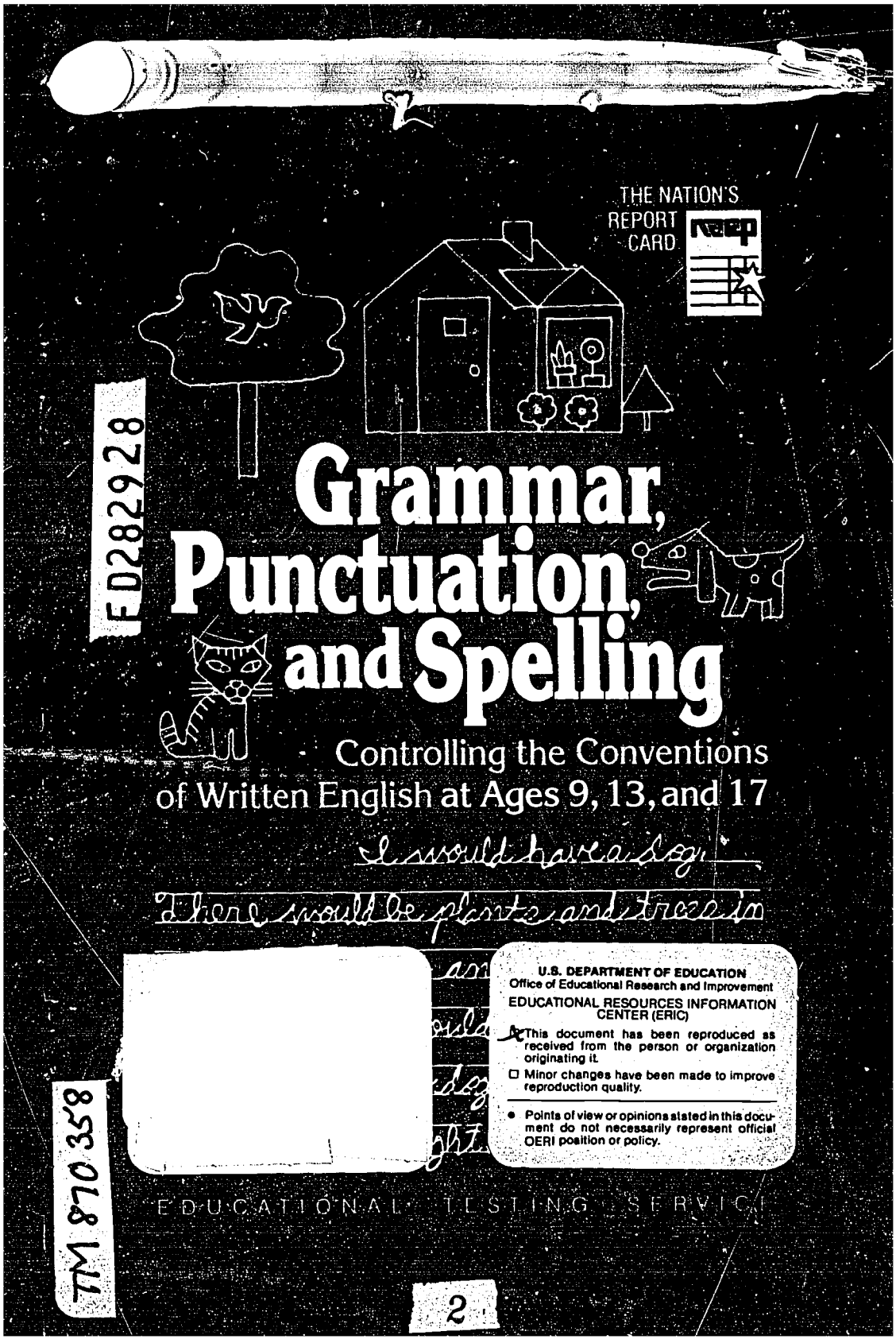
ED 282 928 TM 870 358

AUTHOR Applebee, Arthur N.; And Others
TITLE Grammar, Punctuation, and Spelling: Controlling the Conventions of Written English at Ages 9, 13, and 17. The Nation's Report Card.
INSTITUTION Educational Testing Service, Princeton, N.J.; National Assessment of Educational Progress, Princeton, NJ.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO ETS-15-W-03; ISBN-0-88685-063-0; NAEP-15-W-03
PUB DATE Jun 87
GRANT NIE-G-83-0011
NOTE 49p.; This report supplements "Writing: Trends across the Decade, 1974-84" (ED 273 680) and "The Writing Report Card, Writing Achievement in American Schools" (ED 273 994).
AVAILABLE FROM The Nation's Report Card, National Assessment of Educational Progress, Educational Testing Service, Rosedale Road, Princeton, NJ 08541-0001 ($6.50).
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Age Differences; *Educational Assessment; Educational Trends; Elementary Secondary Education; *Grammar; *National Surveys; *Punctuation; Racial Differences; Sex Differences; *Spelling; Writing (Composition); *Writing Evaluation; Writing Skills
IDENTIFIERS *National Assessment of Educational Progress

ABSTRACT

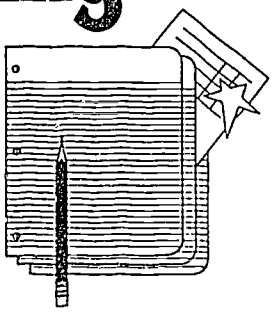
The National Assessment of Educational Progress (NAEP) administered a writing task to nationally representative samples of 9-, 13-, and 17-year-old students in order to assess their abilities to use the conventions of written English. Approximately 2,000 students at each age level completed this task as part of NAEP's 1984 writing assessment. Subsamples were drawn from the total national sample. In order to have reasonable precision in comparisons between black students and white students, the black students were subsampled at a higher rate. In addition to measures of overall quality, each writing sample was analyzed for a variety of aspects of spelling, word choice, punctuation, and syntax. Experienced English teachers coded each sentence type and error on the papers. The analyzed papers were then entered into a computer-readable database. Analyses of data indicate that older students are more proficient than younger ones in their use of written language at both the sentence and the word levels: (1) older students use a greater proportion of complex sentences; (2) spelling improves markedly at the older ages; (3) students at all three ages make few errors in word choice or capitalization; and (4) the majority of students make very few punctuation errors. Because there is no consistent profile of the types of mistakes poor writers make, diagnosis of individual difficulties and instruction targeted at needed skills is recommended over large group drill and practice activities. The appendix contains the scoring guide outline. (LMO)



THE NATION'S REPORT CARD

Grammar, Punctuation, and Spelling

Controlling the Conventions of Written English at Ages 9, 13, and 17



Arthur N. Applebee
Judith A. Langer
Ina V.S. Mullis

June 1987

Report No: 15-W-03
Educational Testing Service

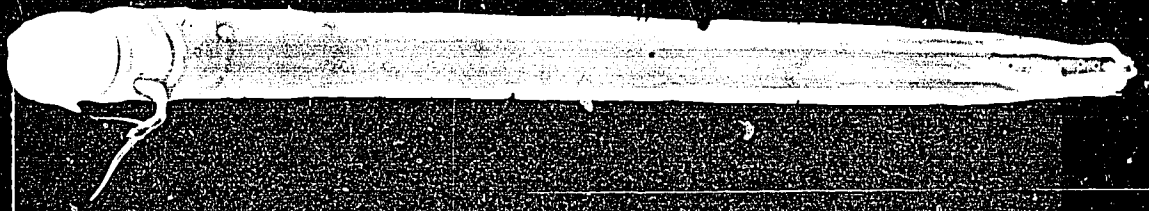
Table of Contents

This report, No. 15-W-03, can be ordered from *The Nation's Report Card*, the National Assessment of Educational Progress (NAEP), at Educational Testing Service, Rosedale Road, Princeton, New Jersey 08541-0001.

Library of Congress, Catalog Card Number: 87-061056

ISBN 0-88685-063-0

The work upon which this publication is based was performed pursuant to Grant No. NIE-G-83-0011 of the Office for Educational Research and Improvement. It does not, however, necessarily reflect the views of that agency.



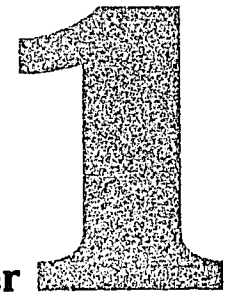
Grammar, Punctuation, and Spelling: Controlling Written English

Executive Summary

As they progress through school, students learn to control the conventions of written English. Analyses of NAEP data at pages 9, 13, and 17 indicate that older students are more proficient than younger ones in their use of written language at both the sentence and the word levels.

- Older students use a greater proportion of complex sentences; their papers include fewer fragments and run-ons.
- Spelling improves markedly at the older ages.
- Students at all three ages make few errors in word choice or capitalization.
- The majority of students make very few punctuation errors. Even for the small proportion who make numerous errors, the rate of errors decreases from age 9 to age 17.

The results of these analyses are encouraging. Most students make only a few errors and the frequency of errors is less at the older ages. While some students have serious difficulty with one or another aspect of grammar, punctuation, or spelling, there is no consistent profile of the types of mistakes a poor writer will make. Because of this, classroom or large group drill and practice activities may be inappropriate and unnecessary. Instead, it may be more productive to diagnose the difficulties of individual students and give them targeted help in specific, needed skills.



Chapter 1

Introduction and Overview

When people think of writing instruction, part of their focus invariably turns to the conventions of written English—to issues such as grammar, punctuation, and spelling. While these conventions reflect writers' needs to express themselves more clearly in written form, they are often treated as a separate set of skills—to be taught, learned, and tested. "Have American schoolchildren mastered the mechanics?" is a continuing question.

Since 1969, The Nation's Report Card, NAEP (National Assessment of Educational Progress), has collected samples of student writing in response to a variety of assignments designed to assess proficiency in written expression. While the major focus of these assessments has been on the ways in which 9-, 13-, and 17-year-olds organize and present their ideas, students' control of the conventions of written language has also been analyzed and reported.

At each of the ages assessed, students have reported that their teachers mark their papers for mechanical errors more frequently than they comment on their ideas (see *The Writing Report Card*). In American schools, there has been a consistent focus on the mechanics of writing.

This report on the conventions of written language is intended as a supplement to *Writing Trends Across the Decade, 1974-84* and to *The*

Writing Report Card, a report of NAEP's 1984 assessment of writing achievement.* The message of the three reports together echoes past reports on writing and writing mechanics: Even though American schoolchildren have difficulty organizing and expressing their ideas in a thoughtful manner, they have reasonable control over the conventions of grammar, punctuation, and spelling.

What We Know About Students' Use of Writing Conventions: From Assessment to Action

The results of the 1984 assessment of the conventions of writing lead to a number of generalizations that can inform instructional practice:

1. **Students are learning the conventions of writing.** By age 17, students write more complex and longer papers with a markedly reduced rate of errors. They write more complex sentences and fewer sentence fragments and run-ons. Spelling performance improves substantially between ages 9 and 17; errors in word choice and capitalization are rare at all three ages. Finally, the majority of students make very few punctuation errors. Students are learning what they are being taught and by the older ages appear to have developed control, if not perfection, in using written language.

   In general, American schools can take pride in their students' success in learning these skills and should continue to provide students with a wide range of opportunities to engage in extended writing.

2. **Everyone makes some errors.** Even the best papers written for the assessment usually included some errors. Particularly in first-draft writing, when students do not have time to reflect on the surface features of their writing and to make revisions, the occur-

* A. Applebee, J. Langer, and I. Mullis. *The Writing Report Card, Writing Achievement in American Schools* (Report No. 15-W-02). Princeton, NJ: National Assessment of Educational Progress, Educational Testing Service, 1986.

A. Applebee, J. Langer, and I. Mullis. *Writing Trends Across the Decade, 1974-84* (Report No. 15-W-01). Princeton, NJ: National Assessment of Educational Progress, Educational Testing Service, 1986.

rence of a modest number of errors seems to be inevitable. These errors in the better papers are not a sign of inadequate control of written language, but rather suggest that during first-draft writing the focus is on the ideas to be conveyed—and this necessary focus on ideas sometimes calls attention away from the surface features of language.

Instructional procedures that encourage students to edit their work for grammar, punctuation, and spelling **as a last stage in the writing experience** would seem to reflect what the best writers do.

3. **Different students make different kinds of errors.** Errors that occur most frequently in the writing of a particular group of students or at a particular age level usually occur frequently in the writing of only a small proportion of those students.

Because patterns of error differ from student to student, effective instruction in the conventions of written language may need to be conducted on an individual or small-group basis so that common problems can be addressed in a focused manner. Instructional activities that emphasize whole-class drill and practice in a particular skill are likely to be inappropriate for the majority of students.

4. **Individual errors are often part of a pattern of errors in a student's writing.** When a student makes a particular type of error in mechanics, it may be part of a larger set of related errors. For example, one error in verb agreement is generally accompanied by other errors in verb agreement.

Errors that occur randomly may simply reflect carelessness or inattention to the surface features of the paper—particularly in a first draft. However, errors that consistently reappear are likely to reflect an underlying misunderstanding of a specific convention of written English.

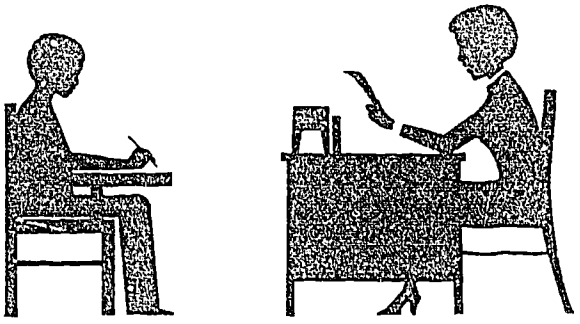
This suggests that teachers should use student papers diagnostically—to look for error patterns and to use such patterns as indicators of needed instruction. Because not all students require practice in the same skills, instruction in the mechanics of writing may work best if it is integrated into the process of learning to

write, and if it is responsive to particular needs. Teachers can focus their help where it is most needed, on the particular feature of a student's writing that needs attention at a particular time.

5. **Writing at greater length provides more opportunities to make errors.** Thus, the number of errors a student makes is in part a function of how much is written. The longer papers written for the assessment consistently included a greater number of errors than did the shorter papers.

   If teachers only concentrate on the number of errors students make, it may have a negative effect on their willingness to write. For example, the lowest achieving student writers also write the shortest papers—and this may be their way of keeping their error count low.

   By being sensitive to this pattern, teachers can recognize that the errors that come with increased length may be indicative of students' attempts at more thoughtful and more difficult writing. They can thus help students expect to be rewarded rather than penalized for taking on more extended or more complex writing tasks.



Chapter 2

General Characteristics of Student Writing

The 1984 Writing Assessment

The procedures used in the 1984 assessment of writing achievement are presented in detail in *The Writing Report Card.* Nationally representative samples of 9-, 13-, and 17-year-old students completed a variety of writing tasks and answered questions about their attitudes toward and experiences with writing and related activities.* Results for overall writing quality and its relationship to background questions are reported in two previous reports: *Writing Trends Across the Decade, 1974-84* and *The Writing Report Card.*

Assessing Students' Use of the Conventions of English

To examine students' ability to use the conventions of written English, one task that had been administered at all three age levels—9, 13, and 17—was selected for further analysis. For this task, students were

*NAEP uses a deeply stratified, multi-stage sampling design. Each stage (primary sampling units, schools, and students) involves selecting random probability samples. The selection of primary sampling units is controlled by community size, type, and geographic region.

shown a picture of a large box that had a hole in it and an eye peeking through the opening. They were then asked to imagine themselves in the picture and to describe the scene and how they felt about what was going on around them. They were encouraged to make their description "lively and interesting." Students were given about 16 minutes to complete the assignment.

Approximately 2,000 students at each age level completed this task as part of NAEP's 1984 writing assessment. For the detailed analysis of adherence to the conventions of written English, nationally representative probability subsamples were drawn from the total national sample. In order to have reasonable precision in comparisons between Black students and White students, the Black students were subsampled at a higher rate. The sample sizes used for analysis in this report are 418 at age 9, 452 at age 13, and 461 at age 17.* Results for these papers provide good estimates of national levels of performance, as well as accurate contrasts between subgroups defined by gender and race (Black and White students).

In addition to measures of overall quality, each writing sample was analyzed for a variety of aspects of spelling, word choice, punctuation, and syntax. Experienced English teachers, thoroughly trained in scoring students' adherence to conventions of grammar and usage, identified these features by coding each sentence type and error on the papers. The analyzed papers (both the original text and accompanying codes) were then entered into a computer-readable database, from which the measures discussed in the present report were derived. Details for these scores are provided in the appendix to this report.

Overall Quality of the Essays

Table 2.1 summarizes the evaluations of the overall quality of the essays, based on ratings of how successful students were in accomplishing the task that was set (primary trait) and of their overall fluency (holistic). In evaluating task accomplishment at all three age levels, NAEP rated papers according to how well students were able to create an imaginary situation based on the picture that they were given.

*Some students subsampled wrote nonratable papers that had to be excluded from the analysis of writing conventions.

The ratings of task accomplishment show a steady increase in performance across the three ages, with the proportion of papers rated minimal or better rising from 44 percent at age 9 to 71 percent at age 17 and the proportion of good papers (those rated as adequate or better) rising from 5 percent at age 9 to 22 percent at age 17. Subgroups also show similar patterns of growth across the age groups, though White students tended to perform better than Black students and females better than males.

Two Views of Overall Quality for the Hole-in-the-Box Writing Task

TABLE 2.1

(Subsample of Papers Analyzed for Conventions)

	Task Accomplishment		Overall Fluency	
	Percentage Minimal or Better Papers {Primary Trait 2, 3 & 4}	Percentage Adequate Papers {Primary Trait 3 & 4}	Mean	Percentage Better Papers Papers {Holistic 4, 5 & 6}
AGE 9				
Nation	**43.8%**	**5.3%**	**2.8**	**25.7%**
Black	42.8	1.0	2.3	14.0
White	43.8	5.9	2.8	27.8
Male	39.9	0.3	2.6	23.2
Female	47.7	10.2	2.9	28.2
AGE 13				
Nation	**64.1**	**19.5**	**3.0**	**36.5**
Black	50.9	6.6	2.3	18.4
White	66.4	21.3	3.1	39.0
Male	57.3	13.2	2.7	30.4
Female	71.0	25.9	3.3	42.3
AGE 17				
Nation	**71.4**	**21.6**	**3.5**	**48.5**
Black	62.2	6.9	2.6	52.9
White	72.5	23.5	3.6	51.5
Male	64.5	17.9	3.1	36.7
Female	78.9	25.7	3.8	60.9

Ratings of fluency were based on readers' general impression of each writing sample, including such features as content, style, organization, and mechanics. In assessing fluency, each age group was judged separately.* This procedure attenuates or lessens the differences among the three age groups, but accentuates the differences among subgroups at each age. The patterns of subgroup differences in fluency are similar to those for the measure of task accomplishment, with White students and females scoring higher than Black students and males, respectively.

To give a sense of the quality of writing that resulted, the following examples illustrate the poorer papers (rated 1, 2, or 3 on the holistic scale of overall fluency) and the better papers (rated 4, 5, or 6) at each of the three age levels. The samples reflect the extent to which the growth that takes place from age 9 to age 17 is multidimensional, involving content, length, diversity of vocabulary, spelling, syntax, and control of other conventions.

Samples of Student Writing

9-Year-Olds

Poor Paper (Rated 2 in Overall Fluency)

I'm surrounded in a
box with three hold and
they have been C, to three
and up top on the box
there's a round big hole
and it is torn in and
it is purple.

* The purpose of this evaluation was to detect changes in writing performance for each age level across time on each task. Thus, papers written in response to a particular task by 9-year-olds (or 13-year-olds or 17-year-olds) as part of the writing assessments across time including that task were randomly mixed together and rated relative to each other. This comparative process enabled NAEP to report trends in writing performance within each age group across time; the trends are reported in *Writing Trends Across the Decade*. The differences in levels of performance noted from younger to older age groups are a result of the readers' own internal standards.

Good Paper (Rated 5 in Overall Fluency)

It would be neet to live there in that house. I would have a dog. There would be plants and trees in side the house and out side the house. There would be a cat next door and my dog and there cat would have a fight. I would have a bird to and it would be a dove and it would get free one day and flya way and get got by the cat next door. I saw the cat next door catch my bird and I saved it. It flee a way a gen and it did not get got agen. My dog and the cat next door fot and fot and fot all day and night. When

Good Paper (Continued)
(Rated 5 in Overall Fluency)

I woke up one morning and I did not here my dog or the cat next door I wondered what had hapened to my dog and the cat next door. I found out latter the cat next door had moved a way to a nother town far a way good I said now we can get some sleep because they moved a ways

13-Year-Olds

Poor Paper (Rated 2 in Overall Fluency)

Well if I was IN that picture I would feel a little scared if knew it IN there with me. And this person seems a little scared himself and I wouldn't get up IN Nothing like that any way it looks like somebody would lock you IN there and want let you out I would be as scared as a mouse I really serious about this.

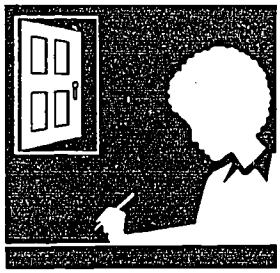
Good Paper (Rated 5 in Overall Fluency)

The scene looks to me as if it were something simalar to an Alice in Wonderland story. It looks as if you were trapped inside and longing to get out. but still are afraid to.

Or, it could be your just playing and the box-like structure is just a hiding place from a friend. The object can be a place of secrecy for you. a place where you can be alone.

The box seems to be an object of great versitility. Used for all emotions. Either the world is coming to an end while your in it or an explosion of happiness keeps you there.

The different shaped holes give an effect of a different illusion, and the grass makes it seem like a play house



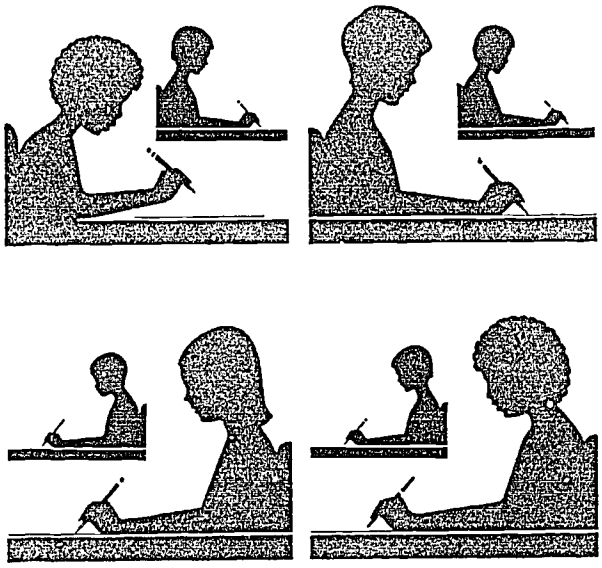
17-Year-Olds

Poor Paper (Rated 2 in Overall Fluency)

I look at this picture and feel a
sense of confusion and desperation.
the many shapes on the box and
how seem to be no order & understand
of what's going on out there the
way the shapes are arranged on
the box shows me to be confused
and with the eyeball in that
one box shows me lonely &
desperate for companionship

Good Paper (Rated 5 in Overall Fluency)

As I sit inside the small, quiet
box, I can hear the sounds of the world
outside. I can feel the sun coming down
on me through the large opening at
the top of the box. The box is very
small and cramped and it feels as
if it is closing in around me. I look
out the small square openings at the
world outside. A great desire to leave the
box comes over me. I try in desperation
to find an escape from the box. However



my attempts are in vain. After several other attempts, I finally give up. I rest against the side of the box. The smell of summer comes up from the grass beneath me. I feel great sorrow as I listen to the world bustling outside my secluded box. For in my enclosed world there is a great feeling of loneliness. The sun is setting now and I close my eyes, giving up the last hope of ever leaving the terrible box.

General Characteristics of Students' Writing

As children gain control of written English, they should be able to use a growing number of words in a growing number of sentences, with relatively greater ease and fewer errors. Analyses of these characteristics in actual student writing indicate that such was the case. **Table 2.2** presents the means (and their standard errors estimated by the jackknife procedure) for each of the descriptive characteristics analyzed, and also presents percentiles to show how these characteristics were distributed across the populations of 9-, 13-, and 17-year olds. For example, the 25th percentile for number of words per paper estimates the number of words that will be exceeded by 75 percent of the population and not exceeded by 25 percent of the population. These percentiles were computed separately for each characteristic.

Between the ages of 9 and 17, students wrote increasingly longer and more complex papers. On average, at age 17, they wrote more words (104 as compared with 54), longer words (3.8 as compared with 3.6 letters per word), more sentences (7.8 as compared with 4.7), and more words per sentence (15.5 as compared with 13.5).

Although the older students wrote more, they had a markedly reduced rate of errors; the rate of errors of all types dropped from an estimated 17 errors per hundred words at age 9 to fewer than 8 errors per hundred words at age 17. And since the assessment time was limited, providing little opportunity for rereading and revising what had been written, there is reason to believe that the error rate would be considerably smaller if students were given more time to look for and correct their own errors.

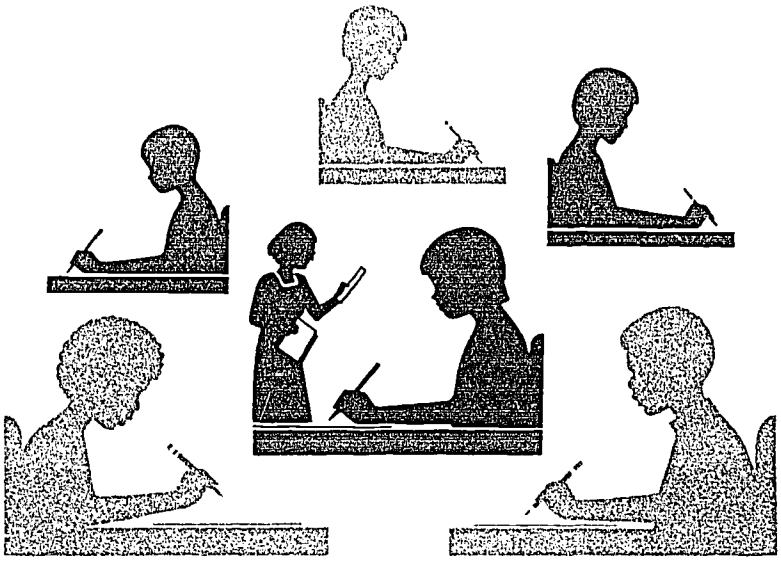
The distribution of errors across papers at each age indicates that most students made some errors, and it seems reasonable to expect some errors in first-draft writing. Even though a few papers at each age contained no errors at all, three quarters of the papers written by the oldest age group had 3 or more errors. Although some errors are likely to be unavoidable in papers written with little or no time for reflection and revision, the frequency of such errors diminishes with age, as children internalize particular conventions of written English.

General Characteristics of Papers for the Nation

TABLE 2.2

	Mean*	Percentiles 25th	50th	75th	90th
Number of Words					
Age 9	53.6 (3.1)	24.9	41.1	68.9	112.2
Age 13	84.7 (3.6)	37.8	65.2	111.9	173.1
Age 17	103.5 (4.7)	47.8	80.2	146.0	208.9
Word Length (Number of Letters per Wo					
Age 9	3.6 (.02)		3.5	3.8	4.0
Age 13	3.7 (.02)		3.7	3.9	4.1
Age 17	3.8 (.02)	3.6	3.8	4.0	4.2
Number of Sentences					
Age 9	4.7 (0.2)	2.0	4.0	6.0	9.0
Age 13	6.9 (0.4)	3.0	5.0	8.0	14.0
Age 17	7.8 (0.5)	3.0	6.0	10.0	18.0
Number of Words per Sentence					
Age 9	13.5 (0.6)	8.0	10.4	15.4	24.0
Age 13	14.1 (0.4)	10.1	12.5	16.5	20.3
Age 17	15.5 (0.4)	10.5	14.0	17.6	23.2
Total Number of Errors					
Age 9	7.3 (0.5)	3.0	5.0	9.0	17.0
Age 13	6.7 (0.3)	2.0	5.0	9.0	15.0
Age 17	6.3 (0.3)	2.0	5.0	8.0	14.0
Number of Errors per 100 Words					
Age 9	17.2 (1.6)	7.1	12.2	22.2	33.4
Age 13	10.0 (0.8)	4.0	7.2	12.4	21.0
Age 17	7.6 (0.4)	2.9	5.8	10.0	15.8

*Standard errors are presented in parentheses. It can be said with 95 percent certainty that the average for the population of interest is in the interval of the estimated average ±2 standard errors.



Good and Poor Writers

Are poor writers less proficient than good writers in the overall characteristics measured? NAEP identified better writers on two separate measures of achievement—on their ability to write sufficiently well to accomplish the task for which their assigned writing was intended (primary trait scoring) and on the general fluency of their writing (holistic scoring). In turn, it is possible to relate these ratings of good and poor performance to other general characteristics of student writing.

These analyses are summarized in **Table 2.3.** Sentence length was similar for good and poor writers, but the total number of words and sentences they wrote, and the relative number of errors they made, differed significantly. The better writers wrote longer papers and made fewer errors per 100 words. Though their rate of errors per 100 words was lower, the better writers actually averaged more total errors per paper, because they wrote so much. At age 17, the better writers also used somewhat longer words, suggesting that they were using a more sophisticated vocabulary.

General Characteristics for Good and Poor Papers (Averages)

TABLE 2.3

	Task Accomplishment		Overall Fluency	
	Good Papers (Primary Trait 3 & 4)	Poor Papers (Primary Trait 1 & 2)	Good Papers (Holistic 4, 5 & 6)	Poor Papers (Holistic 1, 2 & 3)
Number of Words				
Age 9	133.9 (12.6)	49.1 (2.6)*	97.1 (7.1)	38.8 (2.3)*
Age 13	165.3 (12.5)	65.2 (2.4)*	143.5 (7.8)	51.3 (2.2)*
Age 17	192.8 (7.4)	78.8 (3.9)*	155.7 (6.3)	54.9 (2.8)*
Word Length (Number of Letters per Word)				
Age 9	3.6 (.05)	3.6 (.02)	3.6 (.03)	3.6 (.03)
Age 13	3.7 (.03)	3.7 (.02)	3.8 (.02)	3.6 (.02)*
Age 17	3.9 (.03)	3.8 (.02)*	3.9 (.02)	3.7 (.02)*
Number of Sentences				
Age 9	9.9 (1.5)	4.4 (0.2)*	8.8 (0.6)	3.3 (0.2)*
Age 13	13.5 (1.4)	5.3 (0.3)*	12.0 (0.9)	4.0 (0.2)*
Age 17	14.5 (0.8)	6.0 (0.4)*	12.0 (0.6)	3.9 (0.3)*
Number of Words per Sentence				
Age 9	15.7 (1.7)	13.4 (0.7)	12.9 (0.9)	13.8 (0.8)
Age 13	13.7 (0.8)	14.2 (0.4)	13.6 (0.6)	14.4 (0.5)
Age 17	15.4 (0.6)	15.5 (0.6)	15.1 (0.5)	15.8 (0.7)
Total Number of Errors				
Age 9	13.0 (3.2)	7.0 (0.5)	9.3 (1.0)	6.7 (0.6)*
Age 13	9.2 (0.9)	6.1 (0.4)*	9.1 (0.8)	5.3 (0.3)*
Age 17	9.2 (0.9)	5.5 (0.4)*	7.7 (0.5)	5.0 (0.3)*
Number of Errors per 100 words				
Age 9	9.1 (2.0)	17.6 (1.7)*	9.0 (0.6)	19.8 (2.1)*
Age 13	5.9 (0.6)	11.0 (0.9)*	6.7 (0.6)	11.7 (1.2)*
Age 17	4.9 (0.4)	8.4 (0.5)*	5.1 (0.3)	9.9 (0.7)*

***Statistically significant difference between good and poor papers at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)**

Differences in Subgroup Performance

Although Black students tend to perform consistently lower than their White age-mates in writing proficiency, it is interesting to see if, and where, these differences manifest themselves at the word and sentence levels.* A comparison of the overall characteristics of the two student groups indicates a variety of similarities as well as some differences (see **Table 2.4**).

At each age level, both Black and White students wrote words of similar length. However, while White 9-year-olds wrote papers that were only slightly longer than those of Black 9-year-olds (55 as compared with 48 words), at age 13 the White students wrote significantly longer papers than their Black age-mates (87 versus 68 words). At age 17, White students averaged 108 words per paper, compared with only 71 for Black students at the same age.

Although Black students tended to write shorter papers, their error rates at ages 9 and 13 were similar to those for White students. At age 17, however, the Black students' papers included a significantly greater number of errors than did the papers of their White age-mates (11 errors per 100 words as compared with 7 errors per 100 words).

Comparisons can also be made between the overall writing characteristics of males and females. As was shown in Table 2.1, the boys' papers were not rated as highly on overall quality as were the girls' papers. It is interesting, then, to compare other characteristics of their writing, to see where differences manifest themselves.

Table 2.4 indicates that at all ages, girls wrote significantly longer papers and made fewer errors per 100 words. Boys, however, tended to write somewhat longer sentences than did girls.

* The sample size was insufficient to permit reliable estimates for Hispanic, Asian-American, or other subgroups defined by race or ethnicity.

General Characteristics of Papers for Race and Gender (Averages)

TABLE 2.4

	Race		Gender	
	Black	White	Male	Female
Number of Words				
Age 9	48.4 (5.9)	55.2 (3.9)	44.9 (2.8)	62.0 (4.7)*
Age 13	67.9 (7.1)	86.8 (4.0)*	70.3 (3.6)	99.3 (7.5)*
Age 17	71.0 (4.3)	108.0 (5.4)*	86.3 (4.6)	121.4 (9.0)*
Word Length				
Age 9	3.6 (.05)	3.6 (.03)	3.6 (.04)	3.6 (.03)
Age 13	3.7 (.03)	3.7 (.02)	3.7 (.02)	3.7 (.03)
Age 17	3.8 (.03)	3.8 (.02)	3.8 (.03)	3.8 (.03)
Number of Sentences				
Age 9	3.7 (0.4)	5.0 (0.3)*	4.1 (0.3)	5.3 (0.4)*
Age 13	4.7 (0.5)	7.2 (0.4)*	5.4 (0.3)	8.4 (0.8)*
Age 17	4.9 (0.4)	8.3 (0.5)*	6.5 (0.4)	9.2 (0.8)*
Number of Words per Sentence				
Age 9	14.6 (0.9)	13.0 (0.8)	13.9 (1.0)	13.1 (0.6)
Age 13	17.1 (1.5)	13.4 (0.4)*	15.1 (0.8)	13.1 (0.5)*
Age 17	16.8 (0.8)	15.0 (0.5)	15.7 (0.6)	15.2 (0.7)
Total Number of Errors				
Age 9	9.0 (1.7)	7.1 (0.7)	6.2 (0.4)	8.4 (0.9)*
Age 13	7.3 (0.7)	6.6 (0.4)	6.6 (0.6)	6.8 (0.5)
Age 17	6.1 (0.5)	6.2 (0.4)	6.1 (0.5)	6.5 (0.5)
Number of Errors per 100 Words				
Age 9	19.5 (1.7)	17.1 (2.3)	19.2 (2.4)	15.2 (1.2)*
Age 13	11.4 (0.8)	9.6 (0.9)	11.9 (1.4)	8.0 (0.5)*
Age 17	10.5 (0.7)	7.2 (0.4)*	8.9 (0.7)	6.3 (0.4)*

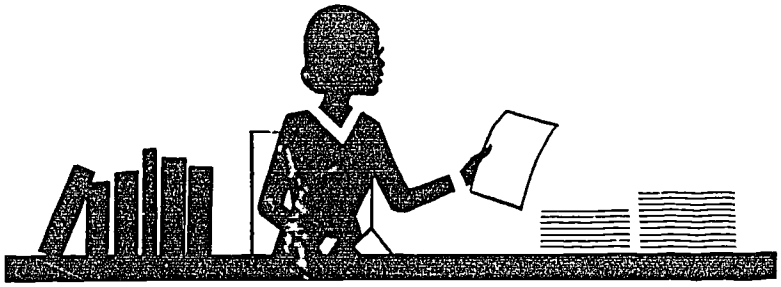
***Statistically significant difference between papers written by Black and White students or males and females at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)**

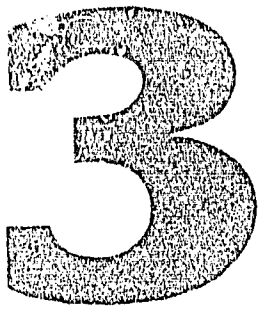
Summary

The analyses of the general characteristics of the writing of the nation's 9-, 13-, and 17-year-olds reflect the greater control that older students have gained in the word- and sentence-level conventions of written English. There are differences in performance among the various subgroups, and while all children make some errors when they write, their improved control of the conventions of writing at older age levels is evident both within and across subgroups.

In general, papers given poorer evaluations tended to be shorter and to contain more errors than papers that were rated more highly. This was true when good papers were rated in terms of their success in accomplishing the task as well as when they were rated in terms of overall fluency. Similarly, boys tended to write shorter papers and to make a higher proportion of errors in their writing than did girls. On the other hand, while Black students' papers tended to be shorter than those of their White age-mates, at ages 9 and 13 they made approximately the same proportion of errors; only at age 17 did White students make fewer errors per 100 words than their Black peers.

Simply knowing that certain groups of students make more errors than others is not helpful to those of us interested in issues of teaching and learning; the nature of those errors must be identified. The following chapters will examine the kinds of errors students make.





Chapter 3

Control of Conventions

In this section, we will examine students' control of sentence structure and of word-level conventions such as spelling, capitalization, and punctuation.

Sentence Structure

Students' control of syntax is reflected in the types of sentence constructions they use in the course of their writing, as well as in the problems that may surface in the sentences they create. To examine this, each sentence was categorized as simple, compound, complex, run-on, or fragment.

Table 3.1 displays the results for the nation. The mean percentage of complex sentences shows a substantial increase across the age levels, rising from an average of 25 percent of each student's sentences at age 9 to 43 percent at 17. Conversely, the average proportion of sentence fragments and run-ons decreases across the same age range, particularly between ages 9 and 13. The percentile scores for run-ons and fragments suggest, however, that these are relatively isolated problems—a student either has trouble with one or the other of these constructions, using it frequently, or has no trouble at all. Thus even at age 9, 50 percent of the students had no run-on sentences and 75 percent included no fragments in their writing.

Use of Sentence Types for the Nation

TABLE 3.1

	Mean*	Percentiles 25th	50th	75th	90th
Percentage Simple Sentences					
Age 9	43.8 (1.9)	0.0	46.2	66.7	100.0
Age 13	40.1 (1.6)	14.3	42.9	61.5	80.0
Age 17	37.5 (1.4)	16.7	37.5	55.6	75.0
Percentage Compound Sentences					
Age 9	8.2 (1.1)	0.0	0.0	0.0	33.3
Age 13	7.7 (0.8)	0.0	0.0	11.1	25.0
Age 17	7.8 (0.7)	0.0	0.0	12.5	27.3
Percentage Complex Sentences					
Age 9	25.1 (1.4)	0.0	16.7	50.0	66.7
Age 13	37.5 (1.4)	14.3	33.3	50.0	100.0
Age 17	43.1 (1.4)	24.2	39.3	62.5	100.0
Percentage Run-on Sentences					
Age 9	15.8 (1.6)	0.0	0.0	25.0	50.0
Age 13	10.5 (1.1)	0.0	0.0	14.3	30.0
Age 17	8.0 (0.9)	0.0	0.0	4.5	25.0
Percentage Fragments					
Age 9	7.0 (1.1)	0.0	0.0	0.0	25.0
Age 13	3.6 (0.6)	0.0	0.0	0.0	11.1
Age 17	3.6 (0.8)	0.0	0.0	0.0	10.0

***Standard errors are presented in parentheses. It can be said with 95 percent certainty that the average for the population of interest is in the interval of the estimated average ±2 standard errors.**

Interestingly, the decrease in the proportion of simple and compound sentences across the age levels is relatively small. Indeed, when use of sentence types is compared with the overall ratings given to the papers **(Table 3.2)**, the better papers seem to use a somewhat greater proportion of simple sentences than do the poor papers—significantly

Use of Sentence Types for Good and Poor Papers (Averages)

TABLE 3.2

	Task Accomplishment		Overall Fluency	
	Good Papers (Primary Trait 3 & 4)	Poor Papers (Primary Trait 1 & 2)	Good Papers (Holistic 4, 5 & 6)	Poor Papers (Holistic 1, 2 & 3)
Percentage Simple Sentences				
Age 9	41.9 (4.3)	43.9 (1.9)	47.2 (3.4)	42.6 (2.3)
Age 13	40.2 (3.0)	40.1 (1.7)	43.0 (2.4)	38.6 (2.0)
Age 17	41.8 (2.3)	36.3 (1.7)	41.8 (1.7)	33.4 (2.6)*
Percentage Compound Sentences				
Age 9	13.5 (3.4)	7.9 (1.2)	8.4 (1.5)	8.2 (1.6)
Age 13	11.2 (1.5)	6.9 (0.9)*	9.4 (1.1)	6.8 (1.1)
Age 17	10.2 (1.9)	7.1 (0.7)	10.5 (0.9)	5.3 (0.8)*
Percentage Complex Sentences				
Age 9	23.0 (2.9)	25.2 (1.4)	28.1 (2.7)	24.1 (1.8)
Age 13	36.9 (2.5)	37.7 (1.7)	36.7 (2.1)	38.1 (1.9)
Age 17	38.4 (2.6)	44.4 (1.6)*	40.5 (2.0)	45.6 (2.1)
Percentage Run-on Sentences				
Age 9	20.4 (2.3)	15.5 (1.7)	13.0 (1.6)	16.8 (2.1)
Age 13	8.9 (1.5)	10.9 (1.3)	9.3 (1.1)	11.2 (1.6)
Age 17	8.2 (1.6)	7.9 (1.1)	5.0 (0.8)	10.9 (1.7)*
Percentage Fragments				
Age 9	1.2 (0.9)	7.3 (1.1)*	3.4 (1.6)	8.2 (1.3)*
Age 13	2.8 (1.0)	3.8 (0.7)	1.7 (0.5)	4.3 (0.8)*
Age 17	1.5 (0.5)	4.2 (1.0)*	2.1 (0.6)	4.9 (1.5)

***Statistically significant difference between good and poor papers at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)**

so at age 17. It may be that at least some of the complexity in the sentence structure of the poorer writers reflects their increased attention to such structure in the process of learning new constructions. (The higher proportion of run-ons and fragments in their writing may reflect similar learning processes.)

Results from an analysis of the proportion of sentences with agreement errors or awkward constructions are consistent with such an interpretation **(Table 3.3)**. At age 9, students had agreement errors in an average of 11 percent of the sentences that they wrote—though these were concentrated in the writing of a small proportion of the students. Seventy-five percent of the 9-year-olds had no problems with agreement at all, while the 10 percent with the most problems had agreement errors in one-third of their sentences. At age 17, the average percentage of sentences with agreement errors dropped to 6 percent, but the 10 percent of the students with the most problems had difficulty in one-fifth of their sentences. Clearly, some small percentage of students could use concentrated help in understanding these conventions.

The average proportion of awkward sentences remains constant,

Errors in Sentence Types for the Nation

TABLE 3.3

	Mean*	Percentiles 25th	50th	75th	90th
Percentage Sentences with Agreement Errors					
Age 9	10.7 (1.9)	0.0	0.0	0.0	33.3
Age 13	6.1 (0.9)	0.0	0.0	0.0	25.0
Age 17	6.1 (1.0)	0.0	0.0	0.0	20.0
Percentage Awkward Sentences					
Age 9	20.3 (1.7)	0.0	0.0	33.3	50.0
Age 13	18.1 (1.2)	0.0	8.3	25.0	50.0
Age 17	20.4 (1.7)	0.0	10.0	28.6	60.0

***Standard errors are presented in parentheses. It can be said with 95 percent certainty that the average for the population of interest is in the interval of the estimated average ±2 standard errors.**

however, at between 18 and 20 percent at all three ages—though again about half of the papers did not include such errors.

Both agreement errors and awkward sentences were closely related to the overall success of the writing, with good papers having a significantly lower proportion of errors in sentence structure at all three ages **(Table 3.4)**.

Some sentence-level errors may be a normal feature of the kind of first-draft writing required in the assessment. The better papers at all three ages had a relatively constant proportion of such errors across the three age groups assessed. Agreement errors were quite rare (averaging between 2 and 3 percent of the sentences written), but on average between 8 and 13 percent of the sentences of the better writers were rated as "awkward" at all three ages.

TABLE 3.4

Errors in Sentence Structure for Good and Poor Papers (Averages)

	Task Accomplishment		Overall Fluency	
	Good Papers (Primary Trait 3 & 4)	Poor Papers (Primary Trait 1 & 2)	Good Papers (Holistic 4, 5 & 6)	Poor Papers (Holistic 1, 2 & 3)
Percentage Sentences with Agreement Errors				
Age 9	1.5 (1.1)	11.3 (2.0)*	1.6 (0.7)	13.7 (2.5)*
Age 13	2.0 (0.5)	7.1 (1.0)*	3.6 (0.8)	7.6 (1.1)*
Age 17	2.9 (0.7)	6.9 (1.3)*	3.3 (0.5)	8.6 (2.1)*
Percentage Awkward Sentences				
Age 9	8.4 (3.9)	21.0 (1.7)*	12.7 (1.8)	23.1 (1.8)*
Age 13	9.6 (1.6)	20.2 (1.4)*	12.9 (1.6)	21.2 (1.6)*
Age 17	13.2 (1.6)	22.4 (1.9)*	13.9 (1.5)	26.5 (2.7)*

***Statistically significant difference between good and poor papers at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)**

Differences in Subgroup Performance

Tables 3.5 and 3.6 display the sentence data for subgroups defined by race and sex. Males and females use similar proportions of each sentence type at each of the three age levels, except that females seem

Use of Sentence Types for Race and Gender (Averages)

TABLE 3.5

	Race		Gender	
	Black	White	Male	Female
Percentage Simple Sentences				
Age 9	41.4 (4.0)	44.9 (2.4)	44.9 (3.2)	42.8 (2.5)
Age 13	32.4 (2.9)	41.6 (1.9)*	38.3 (2.6)	42.0 (2.1)
Age 17	30.9 (2.0)	40.0 (1.6)*	36.6 (2.1)	38.4 (1.7)
Percentage Compound Sentences				
Age 9	8.0 (2.2)	9.0 (1.7)	8.2 (1.5)	8.2 (1.6)
Age 13	4.7 (0.8)	8.1 (0.9)*	8.1 (1.5)	7.4 (1.0)
Age 17	5.7 (0.9)	8.1 (0.7)	6.5 (0.9)	9.2 (1.3)
Percentage Complex Sentences				
Age 9	26.1 (2.7)	23.3 (1.9)	20.9 (2.4)	29.1 (2.5)
Age 13	45.3 (3.7)	36.9 (1.5)*	38.1 (2.9)	37.0 (2.4)
Age 17	50.0 (2.3)	41.3 (1.6)*	43.7 (2.3)	42.4 (2.2)
Percentage Run-on Sentences				
Age 9	14.8 (2.3)	15.2 (2.4)	16.3 (2.6)	15.3 (1.8)
Age 13	13.2 (2.4)	9.4 (1.3)	11.7 (2.0)	9.4 (1.6)
Age 17	9.6 (1.8)	6.9 (1.0)	8.8 (1.8)	7.1 (1.4)
Percentage Fragments				
Age 9	8.7 (1.9)	7.5 (1.6)	9.8 (1.9)	4.3 (0.8)*
Age 13	4.1 (0.9)	3.7 (0.7)	3.4 (1.0)	3.8 (0.7)
Age 17	3.8 (0.9)	3.8 (1.1)	4.4 (1.5)	2.9 (0.7)

***Statistically significant difference between papers written by White and Black students or males and females at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)**

to be somewhat more successful. They use significantly fewer fragments at age 9 (4 percent, compared to 10 percent for the males), have significantly fewer agreement problems at age 9 (8 compared to 14 percent), and have significantly fewer awkward sentences at age 13 (13 compared to 24 percent).

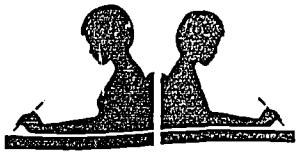
Differences between the papers of Black and White students are somewhat larger. At ages 13 and 17, Black students use a significantly smaller proportion of simple sentences and a correspondingly larger proportion of complex ones. Perhaps partly as a result, the sentences written by Black students were also significantly more likely to be rated as awkward, at all three ages.

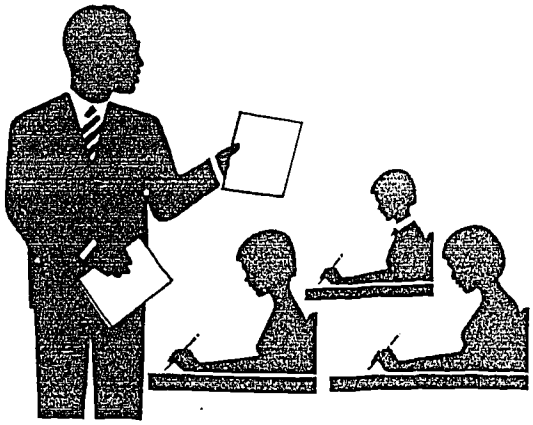
Errors in Sentence Structure for Race and Gender (Averages)

TABLE 3.6

	Race		Gender	
	Black	White	Male	Female
Percentage Sentences with Agreement Errors				
Age 9	17.1 (2.8)	10.1 (2.7)	14.1 (3.1)	7.5 (1.3)*
Age 13	14.4 (2.7)	5.0 (0.9)*	6.6 (1.2)	5.6 (1.2)
Age 17	6.6 (1.3)	6.0 (1.3)	5.3 (0.9)	6.9 (1.9)
Percentage Awkward Sentences				
Age 9	25.6 (3.1)	18.2 (2.0)*	21.6 (2.2)	19.0 (2.1)
Age 13	33.9 (3.4)	15.3 (1.2)*	23.6 (2.2)	12.6 (1.1)*
Age 17	28.5 (2.5)	17.6 (1.9)*	22.3 (2.0)	18.4 (2.4)

*Statistically significant difference between papers written by Black and White students or males and females at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)





Control of Word-Level Conventions

Students' problems in controlling word-level conventions of written English are reflected in errors in spelling, capitalization, and word choice. Data for these measures are summarized in **Table 3.7**. Spelling performance improved markedly between ages 9 and 17. Nine-year-olds misspelled 8 percent of the words they used, and 75 percent of the students at this age averaged 2 or more misspellings out of every 100 words they wrote. The worst spellers at age 9 misspelled 20 percent or more of the words they wrote. By age 17, the average percent of misspelled words had been reduced to 2, and 50 percent of the students averaged about 1 percent or fewer spelling errors. Rates for the worst spellers were also reduced, to 7 percent at the 90th percentile.

Errors in word choice and capitalization were rare at all ages. Even at age 9, 75 percent of the students made no word-choice errors and 75 percent made no errors in capitalization. Unlike spelling errors, which seemed to pile up in the writing of some students, the proportion of

Word-Level Errors for the Nation

TABLE 3.7

	Mean*	Percentiles 25th	50th	75th	90th
Percentage Misspelled Words					
Age 9	8.0 (0.7)	1.9	5.0	11.1	20.0
Age 13	3.4 (0.4)	0.0	1.9	4.4	9.0
Age 17	..4 (0.2)	0.0	1.2	3.2	6.5
Percentage Word-choice Errors					
Age 9	0.4 (.05)	0.0	0.0	0.0	1.3
Age 13	0.5 (.06)	0.0	0.0	0.0	1.8
Age 17	0.5 (.06)	0.0	0.0	0.4	1.5
Percentage Capitalization Errors					
Age 9	1.2 (.36)	0.0	0.0	0.0	2.8
Age 13	0.3 (.04)	0.0	0.0	0.0	1.8
Age 17	0.3 (.05)	0.0	0.0	0.0	0.7

*Standard errors are presented in parentheses. It can be said with 95 percent certainty that the average for the population of interest is in the interval of the estimated average ±2 standard errors.

word-choice and capitalization errors remained low even in the papers that had the highest incidence of such problems.

When the students' word-level errors were related to writing achievement (as reflected both in task accomplishment and overall fluency), the findings were as expected; poor papers contained more word-level errors than did good papers **(Table 3.8)**. At all three ages, the lower-rated papers contained significantly more spelling, word-choice, and capitalization errors.

It is also not surprising to note that these kinds of errors seemed to have a slightly greater effect on readers' overall impression of papers (reflected in the holistic score for general fluency) than on their judgment of specific task accomplishment (based on primary trait scores). Judging a paper in terms of its ability to comply with a specifically stated task helps focus the reader's attention on particular organizational and

informational features that are likely to be realized beyond the sentence level—at the paragraph level and above.

Even so, the better the students were at communicating in writing, the fewer word-level errors they made. This supports the notion that several aspects of control of written language tend to develop in concert. Also, readers expect written language to adhere to conventional forms, and when writing differs from those expectations, it is likely that communication problems will arise.

Word-Level Errors for Good and Poor Papers (Averages)

TABLE 3.8

	Task Accomplishment		Overall Fluency	
	Good Papers (Primary Trait 3 & 4)	Poor Papers (Primary Trait 1 & 2)	Good Papers (Holistic 4, 5 & 6)	Poor Papers (Holistic 1, 2 & 3)
Percentage Misspelled Words				
Age 9	4.5 (1.2)	8.2 (0.8)*	3.4 (0.3)	9.5 (0.9)*
Age 13	1.7 (0.3)	3.8 (0.5)*	2.0 (0.3)	4.3 (0.6)*
Age 17	1.3 (0.2)	2.7 (0.3)*	1.4 (0.1)	3.4 (0.4)*
Percentage Word-choice Errors				
Age 9	0.2 (.10)	0.4 (.06)	0.2 (.06)	0.4 (.07)*
Age 13	0.3 (.08)	0.5 (.07)*	0.3 (.07)	0.6 (.08)*
Age 17	0.3 (.05)	0.5 (.07)*	0.3 (.04)	0.6 (.10)*
Percentage Capitalization Errors				
Age 9	0.4 (.20)	1.2 (.38)	0.4 (.10)	1.5 (.47)*
Age 13	0.2 (.06)	0.4 (.06)	0.2 (.04)	0.4 (.07)*
Age 17	0.2 (.06)	0.4 (.07)*	0.2 (.03)	0.5 (.10)*

***Statistically significant difference between good and poor papers at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)**

Differences in Subgroup Performance

Substantial improvements in adherence to the conventions of written language, as reflected particularly in accurate spelling and capitalization, occurred between ages 9 and 13, with some continued improvement in spelling at age 17. Girls were significantly better spellers than boys at all three ages **(Table 3.9)**, with spelling proficiency improving for both groups between 9 and 17.

Word-Level Errors for Race and Gender (Averages)

TABLE 3.9

	Race		Gender	
	Black	White	Male	Female
Percentage Misspelled Words				
Age 9	8.1 (0.9)	8.3 (1.0)	8.9 (0.7)	7.3 (0.8)*
Age 13	3.7 (0.5)	3.2 (0.4)	4.2 (0.6)	2.6 (0.3)*
Age 17	3.4 (0.4)	2.3 (0.2)*	3.0 (0.4)	1.8 (0.2)*
Percentage Word-choice Errors				
Age 9	0.6 (.12)	0.3 (.07)*	0.3 (.07)	0.4 (.09)
Age 13	0.8 (.13)	0.4 (.08)*	0.6 (.11)	0.4 (.05)
Age 17	0.8 (.10)	0.4 (.06)*	0.6 (.10)	0.3 (.05)
Percentage Capitalization Errors				
Age 9	1.4 (.33)	1.2 (.50)	1.7 (.68)	0.7 (.12)
Age 13	0.4 (.09)	0.3 (.05)	0.4 (.08)	0.3 (.06)
Age 17	0.3 (.09)	0.4 (.07)	0.4 (.06)	0.3 (.09)

***Statistically significant difference between papers written by Black and White students or males and females at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)**

Black students and White students showed relatively similar control of word-level conventions of written English. Proportions of spelling errors were similar at the younger ages, and although they differed significantly in the proportion of such errors at age 17, the totals were low for both groups (3 percent for Black, and 2 percent for White students). Black students in all three age groups also tended to make more word-choice errors than did their White age-mates, though again the proportions were very low.

On average, spelling, word usage, and capitalization were not major problems. The younger students did have noticeable difficulty with their spelling, but by age 13 the percentage of misspelled words was quite low and many students made no spelling mistakes at all. That some errors continued at all ages is to be expected, given the first-draft and timed nature of the task, and the fact that some errors are likely to result from the continuing growth in vocabulary reflected in the measures of word length, discussed earlier.

Poorer writers tended to have more difficulty selecting appropriate words than did better writers, but the incidence of word-choice errors was quite low, even for the poorer performing writers. Nine-year-olds, somewhat understandably, do not have a complete grasp of capitalization rules, but these seem to have been learned by age 13. In general, by the middle school years most students appeared to have developed control, if not mastery, of spelling, word use, and capitalization.

Learning to Punctuate

Punctuation was analyzed in terms of the particular punctuation marks that students used correctly or incorrectly, as well as in terms of the marks that should have been used when punctuation was omitted. Overall error rates are summarized in **Table 3.10**.

Even at age 9, 25 percent of the students made no errors in punctuation, and 50 percent averaged 1.5 or fewer errors per 100 words. Students who made errors in punctuation, however, tended to make quite a few of them. The 25 percent of the papers with the most punctuation errors at age 9 included at least 4.1 errors per 100 words, while the 10 percent most error-prone papers had more than 9 errors per 100 words. Rates of punctuation errors dropped steadily across the three age groups, from a mean of 3.4 at age 9 to 2.0 at age 17.

Overall Errors in Punctuation for the Nation

TABLE 3.10

	Mean*	Percentiles 25th	50th	75th	90th
Total Punctuation Errors per 100 Words					
Age 9	3.4 (0.4)	0.0	1.5	4.1	9.1
Age 13	2.8 (0.3)	0.0	1.8	3.6	5.9
Age 17	2.0 (0.1)	0.0	1.2	2.8	5.1
Punctuation Omitted per 100 Words					
Age 9	3.2 (0.4)	0.0	1.2	3.7	9.1
Age 13	2.5 (0.3)	0.0	1.5	3.1	5.4
Age 17	1.6 (0.1)	0.0	0.6	2.2	4.5
Wrong Punctuation per 100 Words					
Age 9	0.2 (.04)	0.0	0.0	0.0	0.5
Age 13	0.3 (.04)	0.0	0.0	0.0	1.3
Age 17	0.4 (.05)	0.0	0.0	0.5	1.5

*Standard errors are presented in parentheses. It can be said with 95 percent certainty that the average for the population of interest is in the interval of the estimated average ±2 standard errors.

Much of the improvement in punctuation reflected changes in the most poorly punctuated papers, since the majority of students at all three ages made very few punctuation errors. About 10 percent at each age, however, made numerous errors; for this 10 percent with the worst punctuation problems, the rate of errors per 100 words decreased from 9 or more at age 9 to 5 or more at age 17.

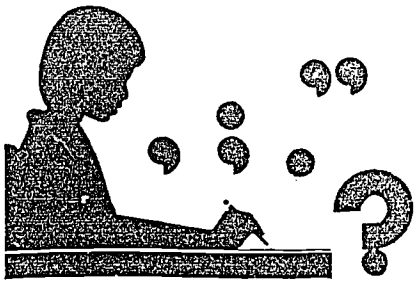
In general, students were much more likely to omit a punctuation mark than they were to use a particular mark incorrectly. Rates of punctuation errors were higher in the poorer papers **(Table 3.11)**, as well as in the papers from the younger age groups. As with spelling errors, rates of errors in punctuation were similar for Black students and White students at the two younger ages **(Table 3.12)**, though at age 17 the rates for Black students were slightly higher than for White students (2.6 compared to 1.9 per 100 words).

Overall Errors in Punctuation for Good and Poor Papers (Averages)

TABLE 3.11

	Task Accomplishment		Overall Fluency	
	Good Papers (Primary Trait 3 & 4)	Poor Papers (Primary Trait 1 & 2)	Good Papers (Holistic 4, 5 & 6)	Poor Papers (Holistic 1, 2 & 3)
Total Punctuation Errors per 100 Words				
Age 9	2.3 (0.5)	3.4 (0.5)	2.6 (0.5)	3.7 (0.5)
Age 13	2.1 (0.2)	3.0 (0.4)*	2.2 (0.3)	3.0 (0.5)
Age 17	1.6 (0.2)	2.1 (0.1)*	1.6 (0.1)	2.3 (0.2)*
Punctuation Omitted per 100 Words				
Age 9	2.2 (0.5)	3.2 (0.5)*	2.3 (0.5)	3.5 (0.5)
Age 13	1.6 (0.2)	2.7 (0.4)	1.8 (0.3)	2.8 (0.5)
Age 17	1.1 (0.2)	1.7 (0.1)*	1.2 (0.1)	2.0 (0.2)*
Wrong Punctuation per 100 Words				
Age 9	0.1 (.07)	0.2 (.04)	0.3 (.06)	0.2 (.05)
Age 13	0.5 (.11)	0.3 (.04)	0.4 (.05)	0.3 (.06)
Age 17	0.5 (.09)	0.4 (.06)	0.5 (.08)	0.4 (.07)

*Statistically significant difference between good and poor papers at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)



Overall Errors in Punctuation for Race and Gender (Averages)

TABLE 3.12

	Race		Gender	
	Black	White	Male	Female
Total Punctuation Errors per 100 Words				
Age 9	4.4 (0.4)	3.2 (0.6)	3.4 (0.6)	3.3 (0.4)
Age 13	2.6 (0.3)	2.8 (0.4)	3.2 (0.6)	2.4 (0.2)
Age 17	2.6 (0.3)	1.9 (0.1)*	2.3 (0.2)	1.7 (0.2)*
Punctuation Omitted per 100 Words				
Age 9	4.0 (0.4)	3.1 (0.6)	3.2 (0.7)	3.2 (0.5)
Age 13	2.4 (0.3)	2.5 (0.4)	2.9 (0.6)	2.1 (0.2)
Age 17	2.2 (0.2)	1.5 (0.1)*	1.9 (0.2)	1.3 (0.1)*
Wrong Punctuation per 100 Words				
Age 9	0.4 (.11)	0.2 (.05)*	0.2 (.07)	0.2 (.05)
Age 13	0.3 (.08)	0.3 (.05)	0.3 (.05)	0.3 (.06)
Age 17	0.4 (.09)	0.4 (.05)	0.5 (.10)	0.4 (.06)

***Statistically significant difference between papers written by Black and White students or males and females at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)**

The frequency and accuracy of use of particular types of punctuation are summarized in **Table 3.13**. As one might expect, the most frequently used punctuation marks were those used to delimit sentence boundaries. Nine-year-olds used an average of 8 such marks for every 100 words of text, a ratio that remained fairly constant across ages. (A slight decrease in the use of end marks at the older ages reflects the increase in sentence length, which leads to a need for slightly fewer end marks.) Nine-year-olds' papers reflected some difficulties in sentence punctuation, with such errors in 19 percent of their sentences. In general, however, these errors were concentrated in particular papers. Although 50 percent of the papers at age 9 had no errors in marking sentence boundaries, 25 percent of the 9-year-olds had such problems in one-fourth or more of their sentences, and 10 percent had difficulty with two-thirds or more of the sentences they wrote. Such errors were concentrated in the lower rated papers **(Table 3.14)**; the more highly

rated papers at all three ages on average had end-mark errors in no more than 11 percent of their sentences. By age 17 such difficulties had been greatly reduced, in the poorer as well as the better papers.

Types of Punctuation and Errors in Punctuation for the Nation

TABLE 3.13

	Mean*	Percentiles 25th	50th	75th	90th
End-marks Used per 100 Words					
Age 9	8.0 (0.3)	4.3	7.7	10.9	14.3
Age 13	7.6 (0.2)	5.1	7.0	9.7	12.3
Age 17	7.4 (0.2)	5.3	7.0	9.0	11.1
Commas and Dashes Used per 100 Words					
Age 9	1.2 (0.3)	0.0	0.0	0.9	3.5
Age 13	1.9 (0.1)	0.0	0.9	3.0	5.2
Age 17	2.9 (0.2)	0.0	2.1	4.5	6.7
Other Punctuation Used per 100 Words					
Age 9	1.8 (0.2)	0.0	0.0	2.5	4.9
Age 13	2.2 (0.2)	0.0	1.4	3.2	6.3
Age 17	2.4 (0.2)	0.0	1.6	3.5	6.1
Percentage of Sentences with End-mark Errors					
Age 9	18.8 (2.1)	0.0	0.0	25.0	66.7
Age 13	14.1 (1.4)	0.0	0.0	20.0	50.0
Age 17	8.7 (0.8)	0.0	0.0	7.4	33.3
Comma and Dash Errors per 100 Words					
Age 9	0.9 (.11)	0.0	0.0	1.2	3.3
Age 13	1.1 (.08)	0.0	0.0	1.7	3.1
Age 17	1.0 (.06)	0.0	0.0	1.8	2.9
Other Punctuation Errors per 100 Words					
Age 9	0.6 (.12)	0.0	0.0	0.0	1.9
Age 13	0.1 (.10)	0.0	0.0	0.0	1.4
Age 17	0.5 (.07)	0.0	0.0	0.0	1.6

***Standard errors are presented in parentheses. It can be said with 95 percent certainty that the average for the population of interest is in the interval of the estimated average ±2 standard errors.**

Types of Punctuation and Errors in Punctuation for Good and Poor Papers (Averages)

TABLE 3.14

	Task Accomplishment		Overall Fluency	
	Good Papers (Primary Trait 3 & 4)	Poor Papers (Primary Trait 1 & 2)	Good Papers (Holistic 4, 5 & 6)	Poor Papers (Holistic 1, 2 & 3)
End-marks Used per 100 Words				
Age 9	7.7 (1.0)	8.0 (0.3)	9.0 (0.5)	7.6 (0.4)*
Age 13	8.1 (0.6)	[illegible] (0.3)	8.3 (0.4)	7.3 (0.3)*
Age 17	7.3 (0.3)	7.4 (0.2)	7.5 (0.3)	7.3 (0.3)
Commas and Dashes Used per 100 Words				
Age 9	2.2 (0.5)	1.1 (0.3)	1.4 (0.3)	1.1 (0.4)
Age 13	2.4 (0.3)	1.8 (0.2)	2.6 (0.2)	1.5 (0.2)*
Age 17	4.3 (0.4)	2.5 (0.2)	3.6 (0.3)	2.2 (0.2)*
Other Punctuation Used per 100 Words				
Age 9	3.2 (0.5)	1.7 (0.2)*	2.2 (0.3)	1.6 (0.3)
Age 13	2.9 (0.3)	2.1 (0.2)	2.4 (0.2)	2.2 (0.2)
Age 17	2.9 (0.4)	2.3 (0.2)	2.7 (0.3)	2.1 (0.3)
Percentage of Sentences with End-mark Errors				
Age 9	11.2 (4.7)	19.2 (2.2)	10.4 (2.3)	21.7 (2.8)
Age 13	9.0 (1.9)	15.3 (1.6)	7.7 (1.0)	17.5 (2.1)*
Age 17	8.0 (1.7)	8.9 (0.9)	6.1 (1.0)	11.1 (1.4)*
Comma and Dash Errors per 100 Words				
Age 9	1.1 (.30)	0.9 (.12)	1.2 (.20)	0.8 (.12)
Age 13	1.2 (.18)	1.1 (.08)	1.2 (.14)	1.1 (.11)
Age 17	1.1 (.13)	1.0 (.09)	1.1 (.08)	0.9 (.12)
Other Punctuation Errors per 100 Words				
Age 9	0.8 (.38)	0.6 (.12)	0.9 (.30)	0.5 (.12)
Age 13	0.5 (.13)	0.4 (.12)	0.7 (.20)	0.4 (.09)
Age 17	0.5 (.09)	0.5 (.08)	0.4 (.06)	0.6 (.14)

*Statistically significant difference between good and poor papers at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)

Commas and dashes, which are the most commonly used indicators of internal sentence structure, were relatively rare at all three ages, although they did increase from 1.2 per 100 words at age 9 to 2.9 per 100 words by age 17. Papers that were highly rated made somewhat more use of these punctuation marks, particularly among the older age groups. Errors in the use of commas and dashes were infrequent, however, occurring on the average only once per 100 words; 50 percent of the papers at all three ages contained no errors in the use of commas or dashes. Error rates for these punctuation marks were constant across ages and across good and poor papers.

The use of other punctuation (including colons, semicolons, and apostrophes) showed only a slight increase across the ages (from 1.8 per 100 words at age 9 to 2.4 at age 17), with little difference between better and poorer papers, and with few errors in the way these punctuation marks were used. Students simply did not tend to use very much internal sentence punctuation.

Subgroup Differences in Punctuation Errors

Differences in punctuation errors for subgroups defined by race and gender are summarized in **Table 3.15**. Patterns of punctuation use and rates of errors were very similar across subgroups. Females made slightly fewer punctuation errors overall than did males at age 17, and also made significantly more errors in the use of commas and dashes at age 9. Black students used significantly fewer end marks than did White students at ages 13 and 17 (7 versus 8 per 100 words) and used significantly fewer commas and dashes at age 17 (2 versus 3 per 100 words). The magnitude of these differences, however, remained very small.

Types of Punctuation and Errors in Punctuation for Race and Gender (Averages)

TABLE 3.15

	Race		Gender	
	Black	White	Male	Female
End-marks Used per 100 Words				
Age 9	7.6 (0.7)	8.3 (0.4)	7.9 (0.5)	8.1 (0.3)
Age 13	6.6 (0.3)	7.9 (0.3)*	7.2 (0.3)	8.1 (0.3)
Age 17	6.5 (0.2)	7.6 (0.3)*	7.4 (0.4)	7.4 (0.2)
Commas and Dashes Used per 100 Words				
Age 9	0.7 (0.2)	1.4 (0.4)	1.2 (0.6)	1.3 (0.2)
Age 13	1.5 (0.2)	2.0 (0.1)	1.6 (0.2)	2.2 (0.2)
Age 17	2.3 (0.2)	3.0 (0.2)*	2.7 (0.4)	3.1 (0.3)
Other Punctuation Used per 100 Words				
Age 9	1.7 (0.3)	1.9 (0.3)	1.3 (0.3)	2.2 (0.3)
Age 13	2.5 (0.4)	2.3 (0.2)	2.1 (0.2)	2.3 (0.2)
Age 17	2.1 (0.2)	2.4 (0.3)	2.1 (0.3)	2.7 (0.3)
Percentage of Sentences with End-mark Errors				
Age 9	29.3 (3.5)	16.8 (3.0)*	20.3 (3.4)	17.3 (2.1)
Age 13	15.9 (2.5)	13.2 (1.6)	15.9 (2.1)	12.3 (1.7)
Age 17	14.7 (2.1)	7.5 (1.1)*	10.2 (1.3)	7.2 (1.2)
Comma and Dash Errors per 100 Words				
Age 9	1.3 (.18)	0.8 (.15)	0.6 (.12)	1.2 (.17)*
Age 13	1.2 (.20)	1.1 (.09)	1.1 (.11)	1.2 (.13)
Age 17	1.2 (.18)	1.1 (.07)	1.1 (.12)	0.9 (.10)
Other Punctuation Errors per 100 Words				
Age 9	1.0 (.32)	0.5 (.13)	0.4 (.09)	0.8 (.23)
Age 13	0.4 (.10)	0.5 (.11)	0.5 (.17)	0.4 (.09)
Age 17	0.4 (.11)	0.5 (.08)	0.7 (.13)	0.3 (.06)

***Statistically significant difference between papers written by Black and White students or males and females at the .05 level based on the jackknifed standard error of the difference. (Standard errors of the means are presented in parentheses.)**

Trends Over Time

Are students improving in their ability to use the conventions of written English? NAEP has examined patterns of errors in students' writing in each of the assessments since 1969.* However, because error rates are influenced by the particular topics students are assigned, as well as by the amounts of time they are allotted to complete their writing, directly comparable scores are not available over time. Even so, the range and the nature of the errors in the writing collected in the 1984 assessment are roughly comparable to results obtained in earlier assessments. Overall, the data suggest that there have been no dramatic changes over time—for better or for worse—in control of the conventions of written English.

Reflections

Both the educational community and the general public are concerned about how well the nation's students are learning to control the conventions of written language. Error-free spelling, syntax, punctuation, and usage are considered one of the marks of a properly educated person. Results of these analyses should provide some comfort to those concerned with such issues—students are indeed learning to control the conventions of written English.

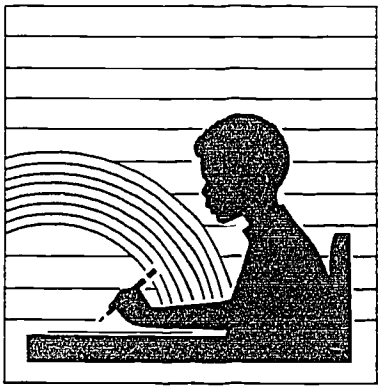
Findings from the analyses indicate that as they progress through school, students become more proficient users of written language at both the sentence and the word level. Across the ages, there is a steady increase in the proportion of complex sentences that students write, and their papers include increasingly fewer fragments and run-on sentences. The papers of the 17-year-olds reflect their ability to use simple and complex sentences selectively.

Students also demonstrate control of written English at the word level. Across the ages, spelling improves markedly, and students at all

* ***Writing Achievement, 1969-79: Results from the Third National Writing Assessments, Volumes I, II, and III*** **(Report Nos. 10-W-01, -02, and -03). Denver, CO: National Assessment of Educational Progress, Education Commission of the States, 1980.**

ages make few errors in word choice or capitalization. Punctuation errors seem to directly reflect the learning that is taking place. Students do not use punctuation marks with which they are unfamiliar, but when they are learning a particular mark, they use it frequently, perhaps in an attempt to understand better its appropriate (and inappropriate) uses.

In all, the results of these analyses are encouraging. Students are learning the conventions that they need for their writing. Findings of the particular analyses suggest, however, that learning writing conventions is an individual process, with particular skills being learned and practiced by particular children at particular times. There is no consistent profile of the types of mistakes a poor writer will make, for example. Hence, asking an entire class to focus on a particular convention of written English seems unnecessary, even inappropriate. Instead, instruction may be more effective if it treats students as individual language learners, with the teacher relying on each student's own written papers for information about what that student knows and is in the midst of learning. With this knowledge, instruction in particular skills can be targeted toward the students who most need it and toward the kinds of help each student needs most.



Appendix

NAEP Sentence Types and Mechanics: Scoring Guide Outline

I. Sentence Types

1. **Simple**—A sentence that contains a subject and a verb. It may also have an object, subject complement, phrase, appositive, nominative absolute or verbal. Also, a word group used in dialogue, for emphasis, or as an exclamation that is not an independent clause.

2. **Compound**—A sentence containing two or more simple sentences joined by something other than a comma.

3. **Complex (and compound-complex)**—A sentence that contains at least one independent clause and one dependent clause.

   Sentence types with punctuation errors were not classified in the above categories.

4. **Run-on Sentence**

   a. Fused—A sentence containing two or more independent clauses with no punctuation or conjunction separating them.

   b. On and on—A sentence consisting of four or more independent clauses strung together with conjunctions.

   c. Comma splice—A sentence containing two or more independent clauses separated by a comma instead of a semicolon or a coordinating conjunction.

5. **Fragment**—A word group, other than an independent clause, written and punctuated as a sentence.

II. Faulty Sentence Construction

(These scores are in addition to the sentence types.)

1. **Agreement Error**—A sentence where at least one of the following is present: subject/verb do not agree, pronoun/antecedent do not agree, noun/modifier do not agree, subject/object pronoun is misused, or verb tense shifts.

2. **Awkward Sentence** (The awkward categories are listed in order of category precedence, since only one score was given to a sentence.)

   a. Faulty parallelism—A parallel construction that is

semantically or structurally dysfunctional.

b. Unclear pronoun reference —A pronoun's antecedent is unclear.

c. Illogical construction— Faulty modification or a dangling modifier or a functionally misarranged or misproportioned sentence.

d. Other dysfunctions—A sentence containing an omitted or extra word or a split construction that definitely detracts from readability.

III. Punctuation Errors

Every error of commission and error of omission was coded for commas, dashes, quotation marks, semicolons, apostrophes, and end marks. The most informal rules of usage were used, with the writer receiving the benefit of any doubt.

IV. Word-Level Conventions

1. **Word Choice**—The writer needs a word that is different from the one written. This category also includes attempts at a verb, adjective, or adverb form that is nonexistent or unacceptable.

2. **Spelling**—In addition to a misspelling, this category includes word-division errors at the end of a line, two words written as one, one word written as two, superfluous plurals, and groups of distinguishable letters that do not make a legitimate word.

3. **Capitalization**—A word is given a capitalization error score if the first word in a sentence is not capitalized, if a proper noun or adjective within a sentence is not capitalized, and if the pronoun "I" is not capitalized.

The mechanics scoring was designed to allow the writer as much flexibility as possible under existing conventions of correct writing; consequently, any time two authorities on mechanics disagreed, the more informal interpretation was used.

Because the papers were entered into a computer-readable database, the number of words per paper, number of words per sentence, and number of letters per word were tabulated by computer.

Acknowledgments

This report represents the culmination of effort by many experienced and knowledgeable people—staff and consultants who contributed their ideas, time, and energy to the development, conduct, and analysis of NAEP's 1983-84 writing assessment. Some, because of particularly significant contributions to the work underlying this report, are specifically thanked below.

The analyses were designed by Ina Mullis and Eugene Johnson. Anne Campbell and Wendy Littlefair directed the open-ended scoring; John Barone developed the innovative computerized system to conduct the analyses; and Norma Norris supervised the data entry and conducted the analyses.

Special thanks for the production of this report are due to the many reviewers who suggested improvements and to Beverly Cisney, who provided the excellent word-processing skills essential to the project; Kent Ashworth, who coordinated production efforts; Jack Weaver, who designed the report; and Peter Stremic, who managed the complex printing tasks.

WESTAT, Inc. was responsible for most of the sampling and data-collection activities.

Finally and most importantly, NAEP is grateful for the contributions of students and school administrators, who cooperated so generously.

9076404 • S57P10 • 249382 • Printed in U.S.A.